Work Order ID 53387

November 3, 2009 9:50:27 AM

Item ID: D407-667-105TRN **Accept** **Setup Start** **Stop**

Revision ID: C

Item Name: Crosstube Turning Detail

Start Date: 03/11/2009 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 16/11/2009 **Req'd Qty:** 1.00 **Customer:**

Reference:

Approvals: **Process Plan:** RL **Date:** 09-11-3 **Tooling:** _____ **Date:** _____ **Run Start** **Stop**

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp

Draw Nbr	Revision Nbr
D407-667-145	Rev C

100 0.00

Mori Seiki

MORI SEIKI CNC LATHE LARGE

Mori Seiki CNC Lathe Large

Memo 0.00

1-Fill tube with sand & install plugs DT8673 on both ends as per Folio FA249□2-Turn first side as per Folio FA249□3- File transition lines smooth.

a.m 09 -11 -24 0

110 QC1- Inspect dimensions to dimension sheet 0.00

QC

Quality Control

Memo 0.00

a.m 09 -11 -24 0

120 0.00

Mori Seiki

MORI SEIKI CNC LATHE LARGE

Mori Seiki CNC Lathe Large

Memo 0.00

1-Turn second side as per Folio FA249□2- File transition lines smooth.□3-Remove sand and plugs□4-Scribe part # and batch # using vibrating stylus as per Dwg D206-667-145 □Inside of Cuff(Do not engrave on outside of tube)

a.m 09 - 11 -24 0

Work Order ID 53387

November 3, 2009 9:50:27 AM

Item ID: D407-667-105TRN
Revision ID: C
Item Name: Crosstube Turning Detail
Start Date: 03/11/2009 **Start Qty:** 1.00
Required Date: 16/11/2009 **Req'd Qty:** 1.00
Reference:

Accept

Setup Start
Stop

Cust Item ID:
Customer:

Run Start
Stop

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	QC1- Inspect dimensions to dimension sheet	0.00							
QC	Memo	0.00				a.m	09	-11-	24
Quality Control									
140	QC8- Inspect parts - second check	0.00				1	-	-	AWM 9-11-25
QC	Memo	0.00							
Quality Control									
150	Crosstubes Chemical Conversion	0.00				1	-	-	AWM 9-11-25
HandFXtube	Memo	0.00							
Hand Finishing Crosstubes									

Work Order ID 53387

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Start Date: 03/11/2009 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 16/11/2009 **Req'd Qty:** 1.00 **Customer:**

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Run Start **Stop**

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	QC3- Inspect Part Finish	0.00				AX	8		MB 09-11-25
QC	**Memo**	0.00							
Quality Control									
170		0.00				1	—	—	AWM 9-11-25
Packaging	Packaging								
Packaging	**Memo**	0.00							
	Identify and stock in Kanban rack☐Location: X-TUBE CELL								
180	QC21- Final Inspection - Work Order Release	0.00						09/11/25	
QC	**Memo**	0.00							
Quality Control									

09-11-25

Picklist Print

November 3, 2009 9:50:34 AM

Work Order ID: 53387

Parent Item: D407-667-105TRNRevC

Parent Item Name: Crosstube Turning Detail

Start Date: 03/11/2009 **Required Date:** 16/11/2009

Comments:

Start Qty: 1.00 **Required Qty:** 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D6010-115RevA		Manufactured	No			110	Each	55.0000	1.0000			
Crosstube Material										AR	09-11-2009	

Warehouse Location	Loc Qty	Loc Code	
Main Warehouse			
LG	55		
26424	4		
32308	6		
38343	45		6

DART AEROSPACE LTD	Work Order:	53387
Description: Crosstube Assembly	Part Number:	D407-667-145
Inspection Dwg: D407-667-145 Rev: C		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

[X] First Article [] Prototype

Inspection Sheet Drawing Dimension		Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	2.240	✓			
	1.865	+0.005/-0.000	1.869	✓			
	1.878	+0.005/-0.000	1.881	✓			
	1.970	+0.005/-0.000	1.975	✓			
	2.030	+0.005/-0.000	2.030	✓			
	2.165	+0.005/-0.000	2.170	✓			
	0.125	+/-0.010	0.125	✓			
	R0.063	+/-0.010	R0.063	✓			
	R0.500	+/-0.010	R0.500	✓			
	R0.063	+/-0.010	R0.063	✓			
	4.438	+/-0.010	4.438	✓			
SIDE B	2.240	+0.005/-0.000	2.240	✓			
	1.865	+0.005/-0.000	1.868	✓			
	1.878	+0.005/-0.000	1.881	✓			
	1.970	+0.005/-0.000	1.975	✓			
	2.030	+0.005/-0.000	2.030	✓			
	2.165	+0.005/-0.000	2.170	✓			
	0.125	+/-0.010	0.125	✓			
	R0.063	+/-0.010	R0.063	✓			
	R0.500	+/-0.010	R0.500	✓			
	R0.063	+/-0.010	R0.063	✓			
	4.438	+/-0.010	4.438	✓			
	113.20	+/-0.020	113.200	✓			

Measured by:		Audited by:	AWM	Prototype Approval:	N/A
Date:	09-11-21	Date:	9-11-25	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	04.04.21	New Issue (P/O D407-667-105)	KJ/RF	
B	06.03.09	Dwg Rev updated	KJ/JLM	
C	09.06.11	Dwg Rev updated	KJ	

Item	Qty -145	Part Number	Description
1	X	D407-667-145	CROSSTUBE ASSEMBLY (407 HIGH FWD)
2	1	D6010-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

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WORK ORDER
NO. 53387
09-11-3

GENERAL NOTES:

1) MATERIAL: MANUFACTURED FROM D6010-115
 FINISHED LENGTH = 113.20±0.020
2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
 PAINT OUTSIDE PER DART QSI 005 4.2
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
4) UNITS: INCHES UNLESS OTHERWISE NOTED.
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
6) IDENTIFICATION: SCRIBE DART PART NUMBER "D407-667-145" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
7) WEIGHT: 17.8 lbs
8) PART IS SYMMETRIC ABOUT CENTERLINE.
9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
10) BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

RELEASED
05/11/12

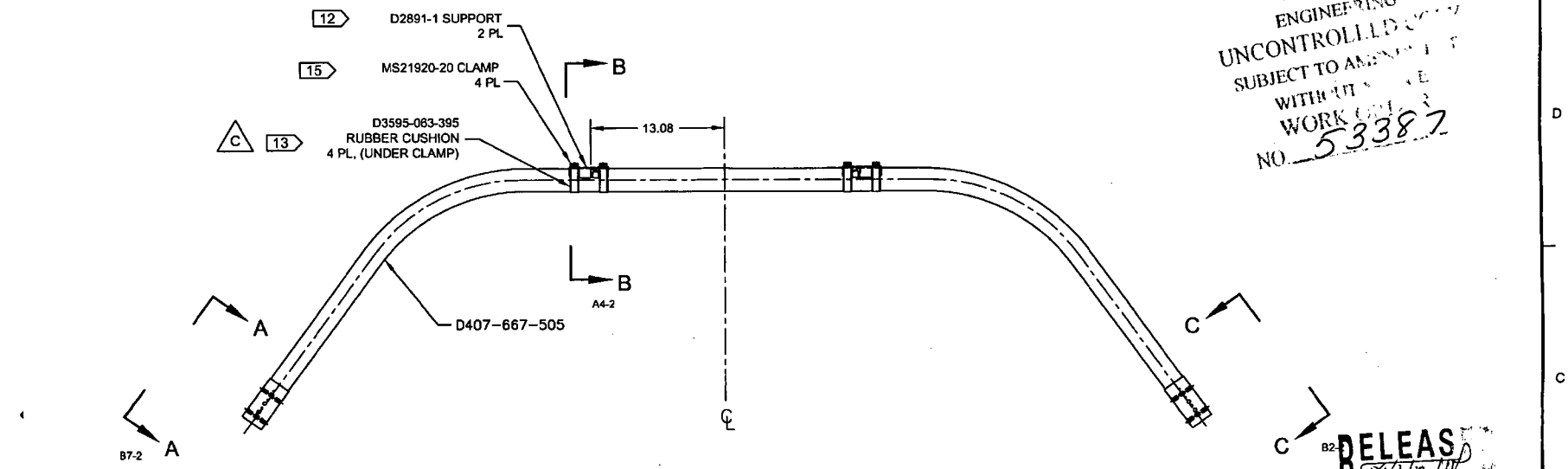
REV.	DESCRIPTION	BY	DATE
C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2); REMOVED REF. 7 ADD TOLERANCES (ZN C6-3, C4-3, D2-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	02.05.08

DESIGN		**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED		DRAWING NO.	REV. C
MFG. APPR.		D407-667-145	SHEET 1 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASS'Y (407 HIGH FWD)	NTS
DATE	08.11.06		

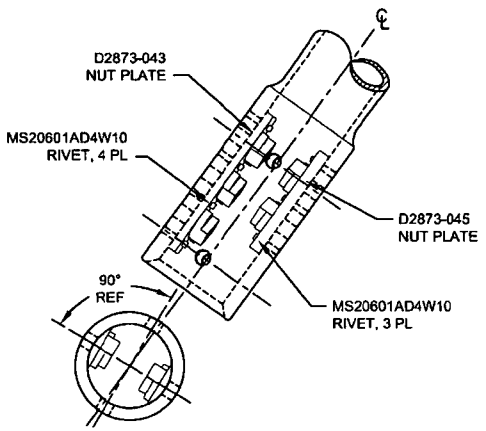
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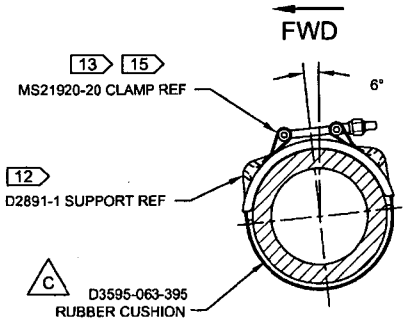
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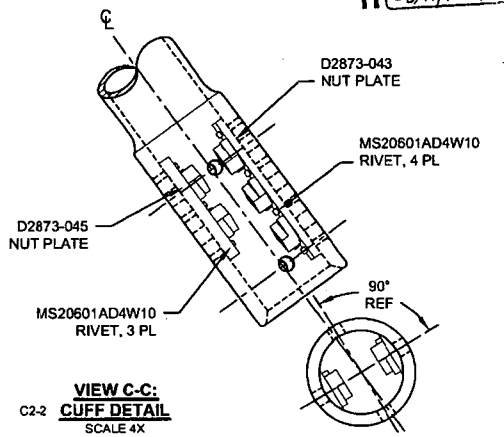
C **D407-667-145 ASSEMBLY DETAIL**
(VIEW LOOKING FWD)



C7-2 **VIEW A-A: CUFF DETAIL**
SCALE 4X



D5-2 **SECTION B-B**
SCALE 5X



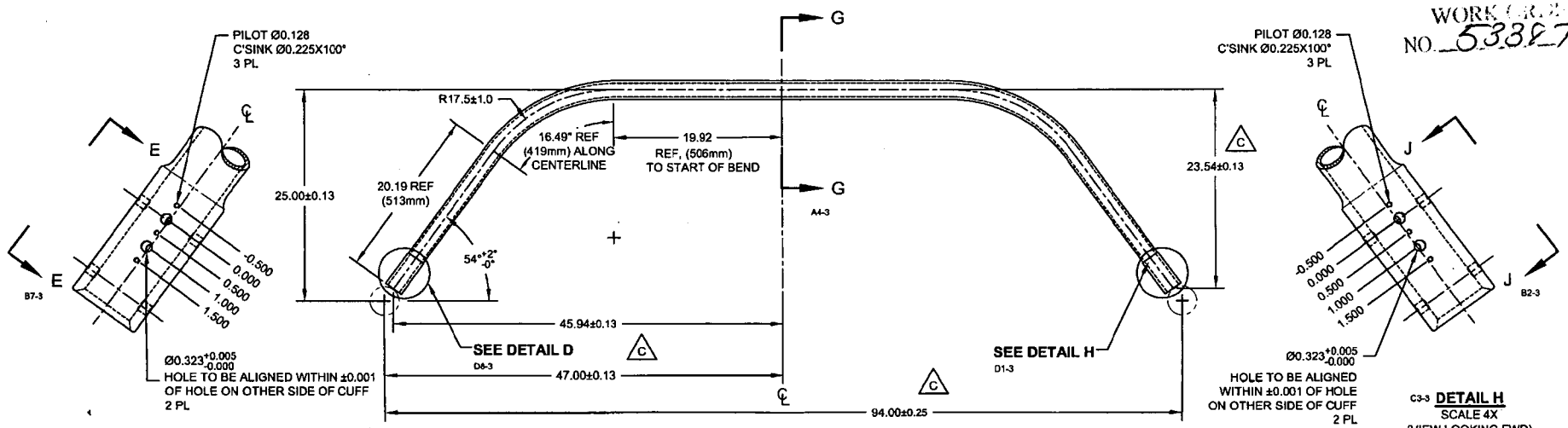
C2-2 **VIEW C-C: CUFF DETAIL**
SCALE 4X

DESIGN		**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED		DRAWING NO. D407-667-145 — REV. C — SHEET 2 OF 4
MFG. APPR.		
APPROVED		TITLE: CROSSTUBE ASS'Y (407 HIGH FWD) — SCALE: NTS
DE APPR.		
DATE	08.11.06	

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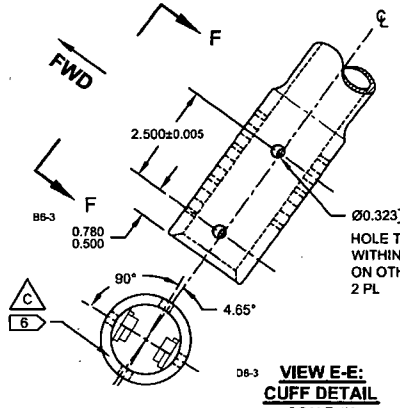
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NO. 53817



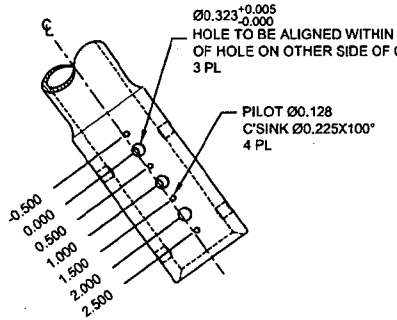
C6-3 **DETAIL D**
SCALE 4X
(VIEW LOOKING FWD)

C3-3 **DETAIL H**
SCALE 4X
(VIEW LOOKING FWD)

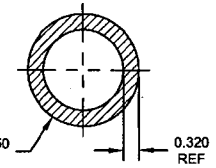
D407-667-505
BENDING AND DRILLING DETAIL
(VIEW LOOKING FWD)



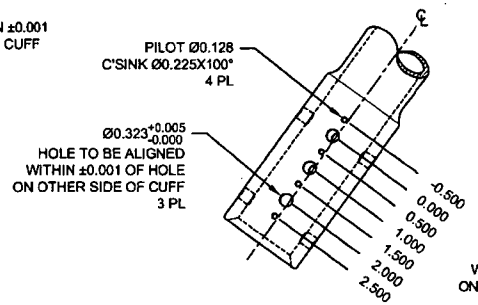
D6-3 **VIEW E-E:**
CUFF DETAIL
SCALE 4X



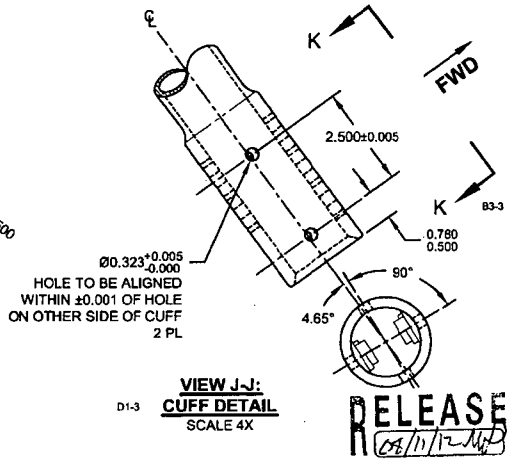
B7-3 **VIEW F-F**
(VIEW LOOKING AFT, ROTATED)



D4-3 **SECTION G-G**
SCALE 5X



B2-3 **VIEW K-K**
(VIEW LOOKING AFT, ROTATED)



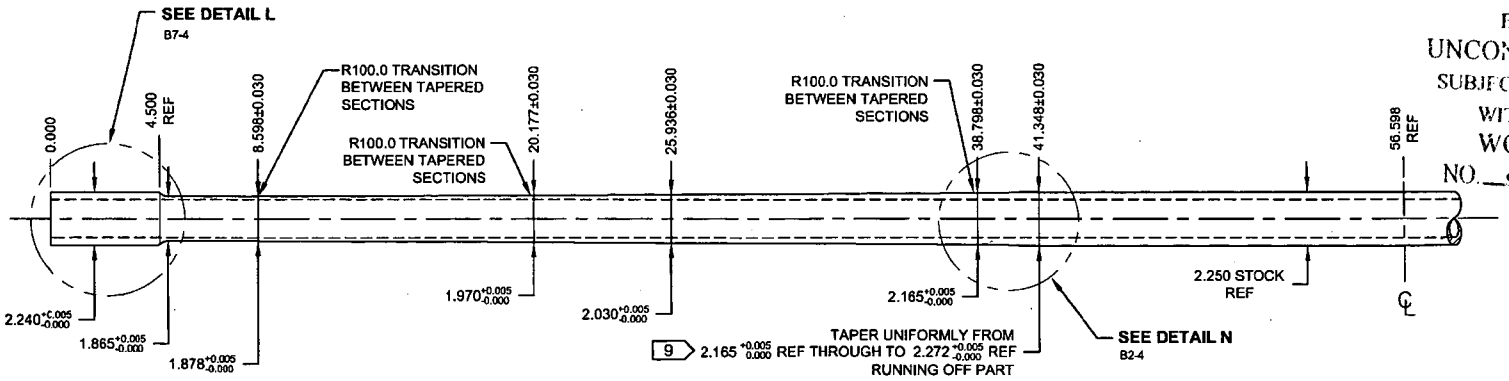
D1-3 **VIEW J-J:**
CUFF DETAIL
SCALE 4X

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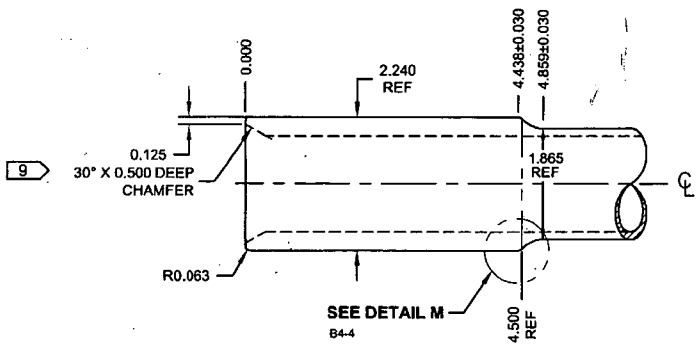
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DRAWN	RF	
CHECKED		DRAWING NO. D407-667-145 — REV. C — SHEET 3 OF 4
MFG. APPR.		
APPROVED		TITLE: CROSSTUBE ASS'Y (407 HIGH FWD) — SCALE: NTS
DE APPR.		
DATE 08.11.06		

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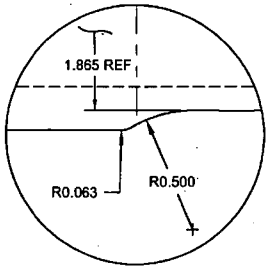
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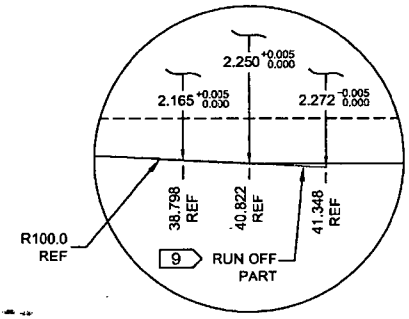
C TURNING DETAIL



DETAIL L:
D7-4 **CROSSTUBE CUFF**
NOT TO SCALE



DETAIL M:
B6-4 **CUFF TRANSITION**
NOT TO SCALE



DETAIL N:
C3-4 **TAPER RUN-OFF**
NOT TO SCALE

RELEASED
08/11/06

DESIGN		**DART AEROSPACE LTD**	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. C
MFG. APPR.		D407-667-145	SHEET 4 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASS'Y (407 HIGH FWD)	NTS
DATE	08.11.06		

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